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and Hygiene in Amherst College. To the Board of Trustees. By Edward Hitchcock. 8vo, pp. 16, table. Amherst, Mass, 1881. From the author.

Ward's Natural Science Bulletin. 4to, pp. 16, cuts. New York, June 1, 1881. From the author.

On an occurrence of Gold in Maine. By M. E. Wadsworth. 8vo, p. 1, No. 3.

A Microscopical study of Iron Ore, or Peridotite of Iron Mine Hill, Cumberland, Rhode Island. By M. E. Wadsworth. 8vo, pp. 6, No. 4. From the Bulletin of Museum of Comparative Zoology, at Harvard College, Cambridge, Mass., May, 1881. From the author.

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## GENERAL NOTES.

### BOTANY.<sup>1</sup>

THE POISON OF *ZYGADENUS PANICULATUS*.—A partial report from the Government chemist, shows that the bulbs of *Zygadenus paniculatus* Watson, have a glucosid to which their poisonous properties are attributed. Convulsions and speedy death follow the eating the bulbs of this plant. No antidote is yet known for it.—*M. E. Jones, Salt Lake City.*

GERMINATION OF *ASTRAGALUS UTAHENSIS*.—While gathering plants on the mountains near Salt Lake City (Utah Territory), I was very much puzzled by seedlings of our beautiful *Astragalus Utahensis* T. and G. It grows in the sand, first throwing up its small cotyledons, then producing two large round, woolly, simple leaves one inch in diameter, on a petiole often three inches long; after these comes another pair of similar leaves; then another with two leaflets on the long petiole, then another with either two leaflets (one on the end of the petiole and the other on one side), or three leaflets in the true odd-pinnate style; the next pair with either three or five, the next with five or seven, and so on. It is a long while after the germination of the seeds before one would suspect that it is an *Astragalus*, or even a member of the Leguminosæ.—*M. E. Jones, Salt Lake City.*

HOW OUR RED CLOVER BEHAVES.—In 1879 our crops of red clover (*Trifolium pratense*) were very luxuriant. After the haying season it made a second growth, in many instances little inferior to the first, and the seeds ripened very perfectly. But to the surprise of all the farmers hereabouts, the following spring (1880) found the clover seed completely killed out! This was very much of a discouragement to many of us who had but recently begun the cultivation of this excellent fodder plant in our comparatively new part of country. Our clover died, no doubt, from severe freezing in the winter of 1879–80, after a period of very great dryness during the latter part of summer, and all of the autumn. But little snow fell in the winter, so that the plants were without the protection which it usually affords. We all thought, however, that the seeds would germinate in the spring,

<sup>1</sup> Edited by PROF. C. E. BESSEY, Ames, Iowa.

and produce a new set of the plants. But this did not occur, and in many meadows where the clover had been thickest, there were bare patches of ground all summer long. As clover is usually sown with timothy (*Phleum pratense*), this last species thickened up and largely supplied its place, so that the hay crop was generally a fine one. During the spring of 1880 there was less than the usual amount of moisture in the soil, while the summer and early autumn were excessively dry. This diminution of moisture no doubt kept the clover seeds from germinating until this spring, when the ground is full of moisture. To the surprise of most people now, after the seeds have lain upon the ground two winters and one summer, they have germinated, and promise to make our meadows as luxuriant with clover as they were in 1879, and previous years! The little plants have sprung up by millions, simultaneously with that sown only a few weeks ago. They are so numerous that probably not one in a score will live. But through the unerring processes of "natural selection," only the fittest will survive; and what is of more practical moment, this unlooked for result will gladden the hearts of our farmers, who were sorely disappointed in the spring of 1880, to find that their clover did not wake up from its long winter sleep.—*Charles Aldrich, Webster City, Iowa, May 17, 1881.*

SETS OF NORTH AMERICAN ALGÆ.—Several years ago Dr. Farlow, Dr. Anderson and Professor Eaton began the publication of sets of the marine algæ of the eastern and western coasts of North America. The first fasciculus of fifty species appeared in 1877; the second also containing fifty species in 1878; the third containing thirty species in 1879. The fourth fasciculus has just been issued (June), and like the first and second, it includes fifty species. It may well be said that it is impossible for any one to get anywhere more satisfactory representatives of the one hundred and eighty species already included in this important distribution. Not only are the specimens all that can be desired, but the eminent qualifications of the editors for this work, give an unusual value and high authenticity to the sets. We are glad to learn that this work has been fully appreciated by botanists, and have been told that it is now impossible to get copies of the first fasciculus, all having been disposed of. The separate fasciculi, however, are valuable, even if all cannot be obtained, and botanists in charge of college herbaria could hardly do better than to secure one or more of them, especially Fasciculus III, which is composed mainly of the larger species, such as *Sargassum* and its allies.

BOTANICAL NOTES.—Centuries VI and VII of Ellis' "North American Fungi" appeared during the last few days of May. Like their predecessors, these two centuries consist of well selected specimens, from nearly all of the groups of the fungi. Thus in Century VI, there are of Basidiomycetes, 22 species, As-

comycetes 44, Myxomycetes 1, and of the so-called imperfect fungi 33. In Century VII, there are of Basidiomycetes 13, Ascomycetes 42. Mixomycetes 2, miscellaneous species and imperfect forms 43. These five sets, which now aggregate 700 species, are well nigh indispensable to the botanist who wishes to intelligently study the lower plants. Their cheapness (\$7 per Century, mounted and labeled), ought to commend them to the curators of college herbaria.—Professor Spalding, of the University of Michigan, has reprinted from the *Therapeutic Gazette*, an interesting pamphlet of 16 pp. on *Ustilago maydis*, the smut of Indian corn. Several wood-cuts serve to illustrate the text.—Dr. Sturtevant has been studying the subject of seedless fruits, and has embodied his results in a paper recently printed by the Massachusetts Horticultural Society. He has brought together a large number of very curious facts.—G. E. Davenport describes in the June *Torrey Bulletin* a new fern, *Cheilanthes Parishii*, from California. An excellent plate, by Faxon, accompanies the text.—Professor Tuckerman in the same number of the *Bulletin* directs attention to a forthcoming work ("Symbolæ Licheno-Mycologicæ") by Dr. Minks, of microgonidia-fame. From the Professor's notice it appears that Dr. Minks proposes to show, not that lichens are fungi, but that many plants hitherto called fungi are in reality lichens!—Dr. Farlow also describes a *Carpinus*, which grew in a jar of water!—The June *Botanical Gazette* contains many valuable papers, among which are the following: Descriptions of New Plants from New Mexico and Arizona, by E. L. Greene; Chlorophyll, by Professor Coulter; Iowa additions to the N. A. Flora by Dr. Engelmann; New Species of Fungi, by C. H. Peck. Dr. Engelmann describes a new species of Conifer, *Tsuga Caroliniana*, nearly related to our common hemlock spruce. It is from the mountains of North and South Carolina.—A catalogue of the Musci of the valleys of the Serchio and the Magra (central Italy west of the Appenines), by Fitzgerald and Bottini, occupies about 100 pp. of the April number of *Nuovo Giornale Botanico Italiano*. Three hundred and sixty-nine species are noticed. Full notes as to habitat and locality accompany each entry.

### ZOÖLOGY.

BRIEF NOTES ON SOME IOWA BIRDS.—I have heretofore stated my belief that the indigo bird (*Cyanospiza cyanea* Baird), is a summer resident of this section. I have no doubt of this—for I saw them here in our thickets on many occasions during the month of May, though I have not yet found a nest. But they sang in the tree-tops, and hunted insects as if "to the manor born;" to-day I saw another, so I concluded that their nests must be near by.

I also mentioned seeing a robin (*Turdus migratorius*) during the